

**REMARKS**

**Claims in the Application.** Claims 2, 30, 52, 53, 56, 60 and 61 have been cancelled from this application. Claims 64-72 have been added to this application. Claims 1, 3-14, 16-17, 19, 24-29, 31-32, 34, 39-40, 45, 50-51, 54-55, 57-59 and 62 have been amended. Accordingly, Claims 1, 3-29, 31-51, 54-55, 57-59 and 62-72 are active in this application.

**Examiner's Rejection Over Bourne.** The Examiner has rejected Claims 1-3, 6-10, 25-26, 31, 39, 45, 51-53, 56-57 and 63 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,964,291 ("Bourne"). This ground of rejection is traversed.

As to independent Claim 1, *Bourne* does not disclose a selectively configured porous particulate material having an apparent specific gravity (ASG) which is *less than* the ASG of the porous ceramic. *Bourne* discloses porous ceramics impregnated with a chemical treatment agent such that the agent may be leached out into well fluids over time (Col. 1, ll. 29-48 and Col. 2, ll. 23-25). In contrast, the selectively configured porous particulate material of Applicants' independent Claim 1 is treated such that it may trap or encapsulate air or fluids within the porosity of the porous particulate. In so doing, the ASG of the selectively configured porous particulate is reduced when compared to the ASG of the porous particulate by itself. See, for instance, p. 17, ll. 23-27 of Applicants' specification. The chemical treatment agents of *Bourne* are heavier than air and thus the ASG of the impregnated proppant particles of *Bourne* are heavier than the ASG of the porous ceramic.

Independent Claim 3 of Applicants is directed to porous particulates of natural ceramic materials, such as volcanic rocks, polyolefins, styrene-divinylbenzene copolymers and polyalkylacrylate esters. The claimed porous particulates are not encompassed within the teachings of *Bourne*. The porous ceramics of *Bourne* are manufactured ceramics.

**Examiner's Rejection Over Youngman.** The Examiner has rejected Claim 18 under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,372,678 ("Youngman"). This ground of rejection is traversed.

Claim 18 recites use of selectively configured porous particulate having a strength which is greater than the strength of the porous particulate material. Table 2 of *Youngman* shows the percentile crush of the treated material to be greater than that of untreated material. Greater percentile crush is indicative of lower, not higher, strength. Thus, Claim 18 is not anticipated by *Youngman*.

**Examiner's Rejection Over Nguyen.** The Examiner has rejected Claim 19 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,960,878 ("Nguyen"). This ground of rejection is traversed.

*Nguyen* discloses impregnating and/or coating a particulate with a tackifying compound in order to slowly release the tackifying compound onto tubular goods. *Nguyen* does not disclose use of the claimed selectively configured porous particulate material wherein the porous particulate is at least partially filled with air or a gas. Reconsideration of the rejection is therefore respectfully requested.

**Examiner's Rejection Over Bourne and Youngman.** The Examiner has rejected Claims 11-12, 14, 17, 29-30, 58-59 and 62 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* in view of *Youngman*. This ground of rejection is also traversed.

Both *Bourne* and *Youngman* are discussed *supra*. Neither *Bourne* nor *Youngman*, by themselves or together, teach the claimed limitation of a selectively configured porous particulate material having an ASG which is less than the ASG of the porous ceramic. The rejection should therefore not be maintained.

Examiner's Rejection Over Bourne and Nguyen. The Examiner has also rejected Claims 5, 34-36, 38 and 55 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* in view of *Nguyen*. This ground of rejection is also traversed.

*Nguyen* does not cure the deficiencies of *Bourne*. Since the tackifying compound of *Nguyen* is heavier than air, the ASG of the impregnated or coated proppant of *Nguyen* would be greater than the ASG of the proppant. *Nguyen* contains numerous references that are contrary to the claimed limitations of Applicants. See, for instance, col. 6, ll. 16-38 of *Nguyen*. The rejection of the claims over *Bourne* and *Nguyen* should therefore not be maintained.

Examiner's Rejection Over Bourne and Brannon. The Examiner has further rejected Claims 4, 16, 24, 47-49, 54 and 61 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* in view of U.S. Patent No. 6,364,018 ("*Brannon*"). This ground of rejection is also traversed.

The Examiner states that "Brannon et al teaches in column 3, lines 52-58 a method wherein the apparent specific gravity of the selectively configured porous particulate material is less than the apparent specific gravity of the porous particulate material." (Paragraph 10.) The cited passage merely refers to a coated proppant of a ground or crushed walnut shell material having a resin coated thereon "to substantially protect and water proof the shell." The referenced specific gravity is directed to the specific gravity of the material, i.e., the ground or crushed walnut shell and not the specific gravity of the coated product.

The selectively configured porous particulate materials of Applicants' invention exhibit an ASG less than that of the porous particulate because of the entrapment or encapsulation of air or other fluid within the porosity of the porous particulate. *Brannon* does not teach the entrapment or encapsulation of air or fluid within the porosity of the ground or crushed walnut shell. On the other hand, *Brannon* discloses treatment of the porous particle with a resin or

hardener. *See*, for instance, col. 2, ll. 26-33 of *Brannon*. There is no reason to conclude that the ASG of the treated material of *Brannon* would be less than the ASG of the porous particulate material. Since the treating agent of *Brannon* is heavier than air, the ASG of the treated particulate of *Brannon* would be greater, not less, than the ASG of the particulate.

**Examiner's Rejection Over Nguyen and Brannon.** The Examiner has also rejected Claims 20-23 under 35 U.S.C. § 103(a) as being unpatentable over *Nguyen* in view of *Brannon*. This ground of rejection is likewise traversed.

*Brannon*, like *Nguyen*, does not disclose or suggest the use of a selectively configured porous particulate material wherein the porous particulate is at least partially filled with air or a gas. The rejection should therefore not be maintained.

**Examiner's Rejection Over Bourne, Nguyen and Brannon.** The Examiner has further rejected Claim 50 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* and *Nguyen* and further in view of *Brannon*.

For reasons stated *supra*, none of *Bourne*, *Nguyen* or *Brannon* disclose a selectively configured porous particulate material having an ASG which is less than the ASG of the porous particulate material. Claim 50 is dependent on Claim 5 which is dependent on Claim 1 and thus the rejection of Claim 50 is traversed.

**Examiner's Rejection Over Bourne and Arnold.** The Examiner has also rejected Claims 13 and 60 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* in view of U.S. Patent No. 4,078,610 ("Arnold"). This ground of rejection is also traversed.

Claim 60 has been cancelled. Claim 13 is dependent on Claim 1. *Arnold* does not cure the deficiencies of *Bourne* in regards to the limitations of Claim 1. Reconsideration is therefore requested.

**Examiner's Rejection Over Bourne, Nguyen and Arnold.** The Examiner has also rejected Claim 33 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* and *Nguyen* in further view of *Arnold*. This ground of rejection is also traversed since *Arnold* does not cure the deficiencies of *Bourne* and *Nguyen* as regards to Claim 1 from which Claim 33 depends. Reconsideration is therefore requested.

**Examiner's Rejection Over Bourne and Todd.** The Examiner has also rejected Claims 40-42 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* in view of U.S. Patent No. 6,31,773 ("*Todd*"). This ground of rejection is also traversed since Claims 40-42 are each dependent upon Claim 1. *Todd* does not cure the deficiencies of *Bourne* in regards to the limitations of Claim 1.

**Examiner's Rejection Over Bourne, Nguyen and Todd.** The Examiner has also rejected Claim 37 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* and *Nguyen* in view of *Todd*. None of *Bourne*, *Nguyen* or *Todd* cure the deficiencies of Claim 1 from which Claim 37 ultimately depends. The rejection should therefore not be maintained.

**Examiner's Rejection Over Bourne and Schutze.** The Examiner has also rejected Claim 27 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* in view of U.S. Patent No. 3,149,674 ("*Schutze*"). The polyolefin of *Schutze* is not porous. The polyolefins of *Schutze* are not porous polyolefins. Claim 27 specifically recites a *porous* polyolefin. The rejection should therefore not be maintained.

**Examiner's Rejection Over Bourne, Youngman and Ramesh.** The Examiner has also rejected Claim 28 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* and *Youngman* in view of U.S. Patent Publication No. 2003/0050432 A1 ("*Ramesh*"). This ground of rejection is also

traversed since *Ramesh* does not cure the deficiencies of *Bourne* nor *Youngman* as they apply to Claim 1, from which Claim 28 ultimately depends.

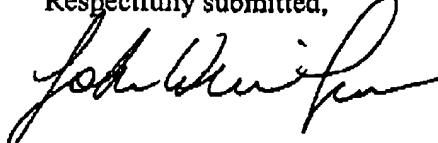
**Examiner's Rejection Over Bourne and Todd and Irani.** The Examiner has also rejected Claims 43 and 44 under 35 U.S.C. § 103(a) as being unpatentable over *Bourne* and *Todd* and further in view of U.S. Patent No. 5,950,727 ("*Irani*"). This ground of rejection is also traversed. *Irani*, by itself or taken with *Todd*, does not cure the deficiencies of *Bourne* as applied to Claim 1, from which Claims 43 and 44 ultimately depend. The rejection should therefore not be maintained.

**Examiner's Objection to Claim 27.** The Examiner has also objected to Claim 27. The amendment to Claim 27 renders a discussion of this objection unnecessary.

**Conclusions.** The Examiner is respectfully requested to telephone the undersigned should he deem it prudent to expedite the prosecution of this application.

Respectfully submitted,

Dated: October 18, 2005

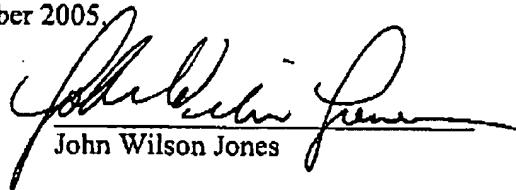


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**CERTIFICATE OF TRANSMISSION, 37 C.F.R. § 1.6(d)**

I hereby certify that this correspondence is being transmitted by facsimile, 571 273-8300, to Examiner Bryan Fuller c/o Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on this the 18<sup>th</sup> day of October 2005.

  
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